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Minks and Muskrats

by Chuck Fergus

Division of Information and Education
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Often two wildlife species are associated closely with each other, at least in the minds of people. The fox and the rabbit, the bobcat and the varying hare, and the mink and the muskrat are examples. While not one of these three predators subsists solely on its "partner" species, the prey often makes up a major portion of the predator's diet. Of the species dealt with in this Wildlife Note, we can say that although the muskrat is not the principal prey of the mink, the mink is the principal predator of the muskrat.

Both mink and muskrat are found in suitable wetland habitat throughout Pennsylvania. They are classified as furbearers, and trappers harvest both species. By far, more muskrats are trapped than minks, while an individual mink pelt is more valuable than that of a muskrat.

Minks

Mustela vison mink is a semi-aquatic member of the family Mustelidae. Other mustelids include weasels, martens, fishers, wolverines, badgers, skunks, and otters. Minks are found over most of the northern hemisphere in both Europe and North America. They live on the edges of lakes, streams, and rivers in forested areas.

Adult males average two feet in length, including an eight-inch tail. They weigh 1½-2 pounds. Females are 10-15 percent smaller than males and up to half a pound lighter. Body configuration resembles that of a weasel: short legs, long, bushy tail, long, sinuous neck and body, short head, and pointed muzzle. A mink's coat is thick, full, and soft. A short, tight layer of underfur is covered with longer guard hairs, which give the pelt its luster. Colors range from russet to a deep, chocolate brown. Unlike some weasels, the mink does not turn white in winter.

Minks have excellent hearing and sight, and a good sense of smell. On land, they travel at a slow, arch-backed walk or a bounding lope, which they can keep up for miles. They swim and dive with ease; a webbing of stiff hairs between the toes of their hind feet helps propel them through water. Minks are most active in the evening, night, and early morning, although they sometimes venture out during the day as well.

Active year-round, minks may curl up and sleep for several days during winter cold spells. Like most mustelids, they are agile and fierce fighters, killing prey with a hard bite to the back of the skull. Prey includes muskrats, mice, rabbits, shrews, fish, frogs, crayfish, insects, snakes, waterfowl and other birds, eggs, and domestic poultry. Generally a mink is

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an opportunist, feeding on whatever is most easily caught or found; thus, it might avoid fighting to kill a healthy adult muskrat if, say, crayfish were abundant and easily captured. Minks occasionally kill more than they can eat. In winter, they cache carcasses and revisit them to feed.

Minks den in abandoned woodchuck tunnels, hollow logs, vacant muskrat lodges (the owners of which they may kill and eat), and holes in stone piles and beneath large tree roots. Dens are usually near water and may have more than one entrance. Minks line their nests with dried grass, leaves, and feathers; bones and scraps of kills often litter the nest area.

Minks are basically solitary, except during mating season, when they use a powerful scent from their anal glands to attract mates. Males fight over receptive females. It's not known whether minks pair up after mating, although males are believed to mate with several females.

Mating occurs from February to April, with most activity in March. After mating, the fertilized eggs develop slightly, but then 13-50 days may pass before the embryos attach to the female's uterine wall and continue developing. This is called delayed implantation, and it is common among mustelids, especially yearling females. Females give birth in early May following a true gestation period of 28-30 days after embryo implantation. Thus, total time from mating to birth may be 40-80 days.

At birth, young are 3½ inches in length, blind, and hairless, and they weigh only a fifth of an ounce. Litters include 2-7 young, with four the average. The female nurses, as do all female mammals. In two weeks, young are furred; their eyes open after five weeks; and after six or seven weeks, they are out foraging with their mother and learning from her how to hunt. The family disperses by late summer. Minks are sexually mature at 10 months.

Minks do best where water is unpolluted, for here exists the greatest concentration and variety of prey. A male covers a range up to three miles in diameter, while a female's range is much less. "Range" can also be thought of as a length of stream bank or lake shore (1-3 miles for males). Individual territories overlap, and the same den may be used by several animals in succession. One mink will have several dens along its hunting route.

Minks live up to 10 years in captivity, but a wild one would be fortunate to survive two or three winters. Disease, cars, and traps are mortality factors, and the species is preyed on by foxes, bobcats, and great horned owls.

Mustela vison mink, the American mink, was introduced to Sweden in the 1920s, and in 35 years spread throughout that country. *M. lutreola,* the European mink, is found from France east to the Caucasus Mountains. Pennsylvania has two subspecies of mink, the less common mountain race, *Mustela vison vison*, being somewhat smaller and darker.

Muskrats

Why the name "muskrat"? "Musk" refers to a strong-smelling substance released from this animal's perineal glands (between the thighs), while "rat" indicates its rat-like appearance. The muskrat, *Ondatra zibethica,* is a rodent--related to mice, voles, beavers, and rats, among others. The nation's most abundant fur animal, the muskrat lives on or near the still or slow-moving water of ponds, marshes, streams, and rivers, and, to a lesser extent, the faster mountain streams. The species is found over most of North America north of the Rio Grande River, including the coastal tidal marshes. It is common in Pennsylvania.

Adult 'rats are 22-25 inches in length, including tail. They weigh 2-3 pounds and have a stout body, short legs, and an 8-12-inch tail which is flattened vertically, scaly, and practically hairless. Ears and eyes are small but well-developed. In appearance, muskrats resemble small beavers with long, rat-like tails.

The tail functions as a prop when the animal stands on its hind feet, and as a rudder and propulsion-aid when it swims. The large, broad, partially webbed hind feet power the muskrat through water; forefeet are small, with well-developed claws used for burrowing. To insulate against cold water, a muskrat's underfur is dense, silky, and soft, overlain with long, dark brown guard hairs shading to gray-brown on the throat and belly. Overall pelt color can be chestnut-brown to almost black, or any color in between.

Food: roots and stems of aquatic plants (the cattail is the single most important item; also bullrushes, water lilies, pickerelweed, and others), and, when they grow near water, legumes, grasses, grains, garden crops, and fruits. 'Rats eat a small amount of animal protein, including crayfish, freshwater

mussels, fish, and frogs--the last two often as carrion--and even carcasses of other muskrats. 'Rats don't hibernate; over winter they subsist on roots and shoots dug from marsh bottoms, plus twigs, buds, and bark of various trees, including willows, cottonwoods, ash, and box elders.

Muskrats build houses (also called lodges) of vegetation, or they burrow into stream banks, earthen dikes, and dams, often causing considerable damage. Both lodges and burrows have underwater entrances and above-water living quarters. Lodges are built of cattail stalks or other vegetation, chinked with mud and weeds above waterline. They may be 8-10 feet across and 2-3 feet above water, with a single living chamber plus offshoots, or several chambers. Muskrats do not dam streams as beavers do.

In breeding season, muskrats leave musk, or scent, in likely places around their territories to attrace potential mates. Males may impregnate several females, and play no part in raising young.

Muskrats have a high reproductive potential, giving birth to large litters and breeding from spring to fall. Mature females have two, three, or even four litters each year, depending on the length of the warm season (more litters in southern Pennsylvania, fewer in the north).

After a 30-day gestation period, the female bears 5-8 naked, blind, and helpless young. In a month they are weaned and fully furred, and the female drives them off, especially if she is about to bear another litter. A female may overwinter with her final litter of the year, the family breaking up in the spring. Young disperse along streams or colonize new sections of marsh.

Muskrats are sexually mature the year following their birth, but few survive long enough to breed. Young 'rats and dispersing immatures are especially vulnerable to minks, hawks, owls, foxes, snapping turtles, and snakes. Surplus animals--individuals beyond the number that the habitat can support in good health over the long run--will be lost in one way or another. They may be forced to move to new areas which may or may not be able to support them or they may simply wander and survive for some time but not have a chance to breed. (In many species, females will mate only with males which have something to offer such as a territory, an attractive nest site, or high social status. Other males do not attract females, cannot pass on their genes in the form of young animals, and so are, from a genetic point of view, excess baggage.) Surplus individuals are more vulnerable to predation than are members of the secure, basic population. But whether they die from predation or from some slower process such as starvation or disease, they die.

Some prey populations may limit their own numbers by failing to breed in crowded conditions, by aggressively defending a territory in overpopulated areas, or by some other type of behavior. Overcrowded muskrats are strongly territorial, and predation by minks is just a handy way of reducing the excess population. Minks seldom have much

effect on local muskrat populations; the surplus animals would die soon anyway, and the basic population seems surprisingly safe from minks. Only if the habitat should change, such as when drought comes and the marsh dries up, would formerly secure muskrats be vulnerable to minks; the habitat can no longer support as large a 'rat population, and some of the basic population is now surplus. A bad winter, an outbreak of disease such as coccidiosis, or a flood during the height of breeding season may also cut muskrat numbers. The population varies widely from year to year, but tends to show a peak in abundance about every 10 years.

Muskrats are tenacious fighters. Minks prefer to tackle young or sick 'rats, because a mature adult puts up a brisk defense. (Females defending young have been observed actually driving off attacking minks.) Muskrats are parasitized by mites, fleas, flatworms, roundworms, and tapeworms. While the average lifespan is under twelve months, some individuals may live as long as five or six years.

Through their feeding, muskrats open up areas of densely vegetated marsh; this can change local habitats to benefit waterfowl and other aquatic wildlife. Muskrats also damage agricultural and ornamental crops near water, and their tunnels riddle dams, dikes, canal banks, etc. This is a serious problem and trapping is the most effective and least expensive solution to it.

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WILDLIFE NOTES AVAILABLE

175-1 Squirrels
(Gray, red, fox and flying squirrels)

175-2 Ruffed Grouse

175-3 Bobcat

175-4 Cottontail Rabbit

175-5 Red and Gray Foxes

175-6 Woodchuck

175-7 The Varying Hare (Snowshoe Rabbit)

175-8 The Night Hunters: Owls
(Barn, great horned, snowy, barred, long-eared, short-eared, screech, and saw-whet owls)

175-9 Raccoon

175-10 Raptors
(Goshawks; sharp-shinned, Cooper's red-tailed, red-shouldered, broad-winged, rough-legged hawks; harrier, peregrine, merlin and kestrel)

175-11 Otter

175-12 Crows & Ravens

175-13 Woodpeckers

175-14 Beaver

175-15 Bobwhite

175-16 Heron Family

175-17 Wild Turkey

175-18 Dove

175-19 Ring-Necked Pheasant

175-20 Canada Goose

175-21 Woodcock

175-22 Minks & Muskrats

175-23 Striped Skunk

175-24 Porcupine